BEST AVAILABLE COPY

(12) UK Patent Application (19) GB (11) 2 273 091 (13) A

(43) Date of A Publication 08.06.1994

(21) Application No 9225474.7

(22) Date of Filing 05.12.1992

(71) Applicant(s)
Roland Davison
55 Dallas Street, MANSFIELD, Nottinghamshire, United Kingdom

(72) Inventor(s)
Roland Davison

(74) Agent and/or Address for Service
Eric Potter Clarkson
St Mary's Court, St Mary's Gate, NOTTINGHAM, NG1 1LE, United Kingdom

(51) INT CL^5
B65G 65/24, B62B 1/26

(52) UK CL (Edition M)
B8E E1C
B7B BTL1 BTL2
U1S S1111 S1807

(56) Documents Cited
GB 2068305 A GB 0972553 A GB 0712977 A
GB 0326186 A GB 0247270 A

(58) Field of Search
UK CL (Edition L) **B7B BTL1 BTL2, B8E E1C**
INT CL^5 **B62B 1/26, B65G 65/23 65/24**

(54) Combined barrel trolley and cradle.

(57) A trolley for transporting a barrel (100) comprising a cradle (12) which has a first side which is adapted to support the side of the barrel (100) and a wheel means (26, 28) disposed on a second side of the cradle (12) opposite the first side, a handle (22) projecting from a first end region of the cradle; a projecting portion (24), attached at a second end region of the cradle opposite the first end region, which projects generally orthogonally of the first side of the cradle and is adapted to support the base of the barrel (100); and a gripping means (36) disposed at the second end of the cradle for gripping the rim of the barrel (100). After transporting, the trolley is lifted to rest on legs (30b, 30c) to settle and onto legs (30c, 30a) for dispensing.

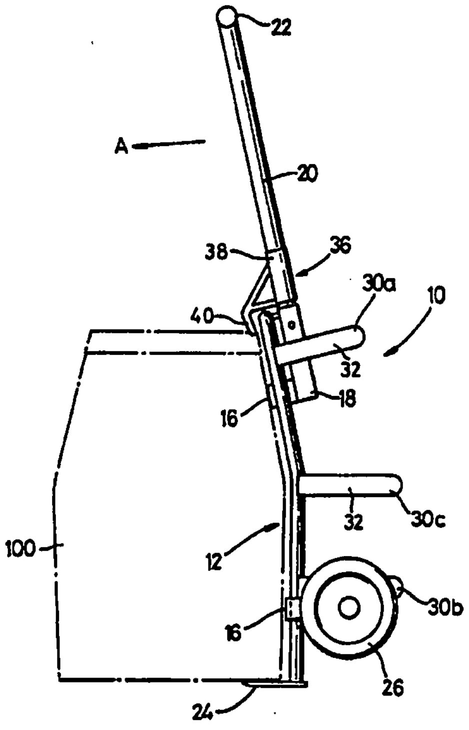

Fig. 1

At least one drawing originally fil7/5/2005, EAST Version: 2.0.1.4in from a later filed formal copy.

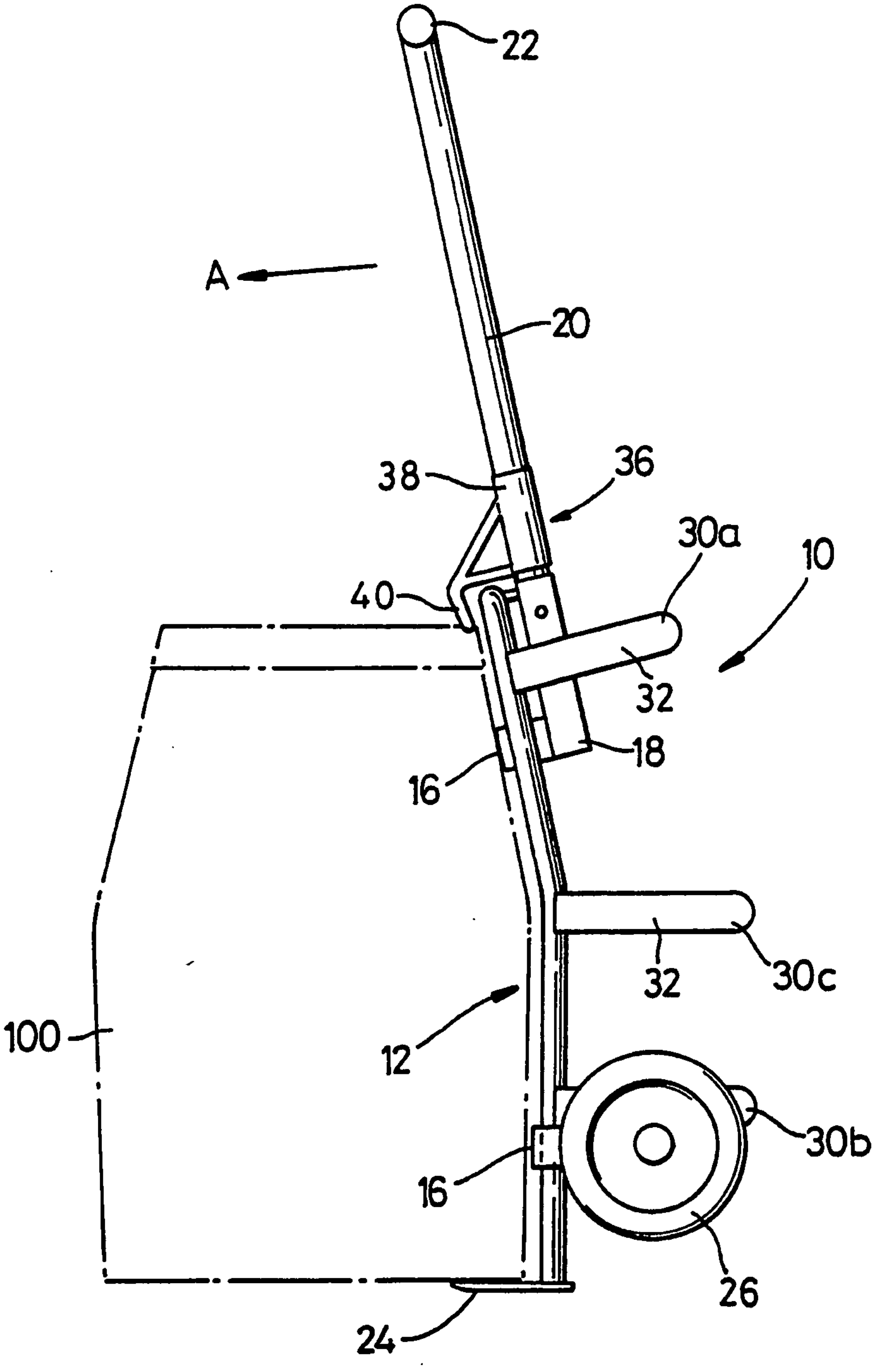

Fig. 1

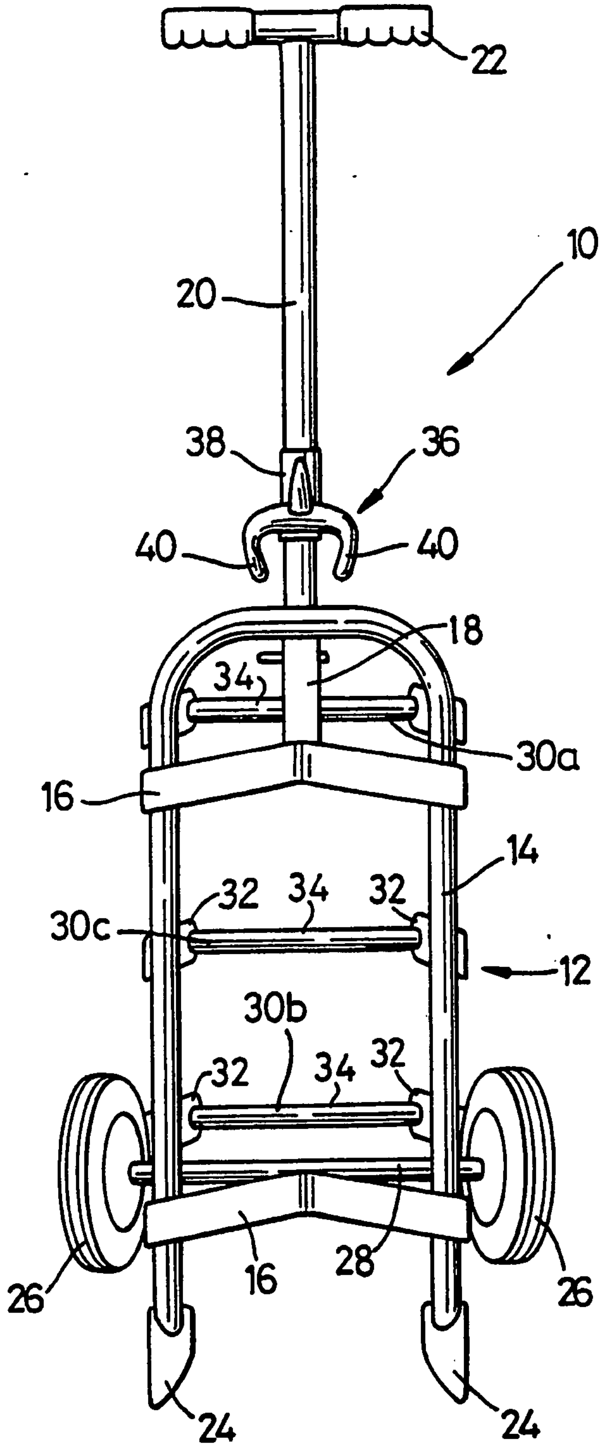

Fig. 2

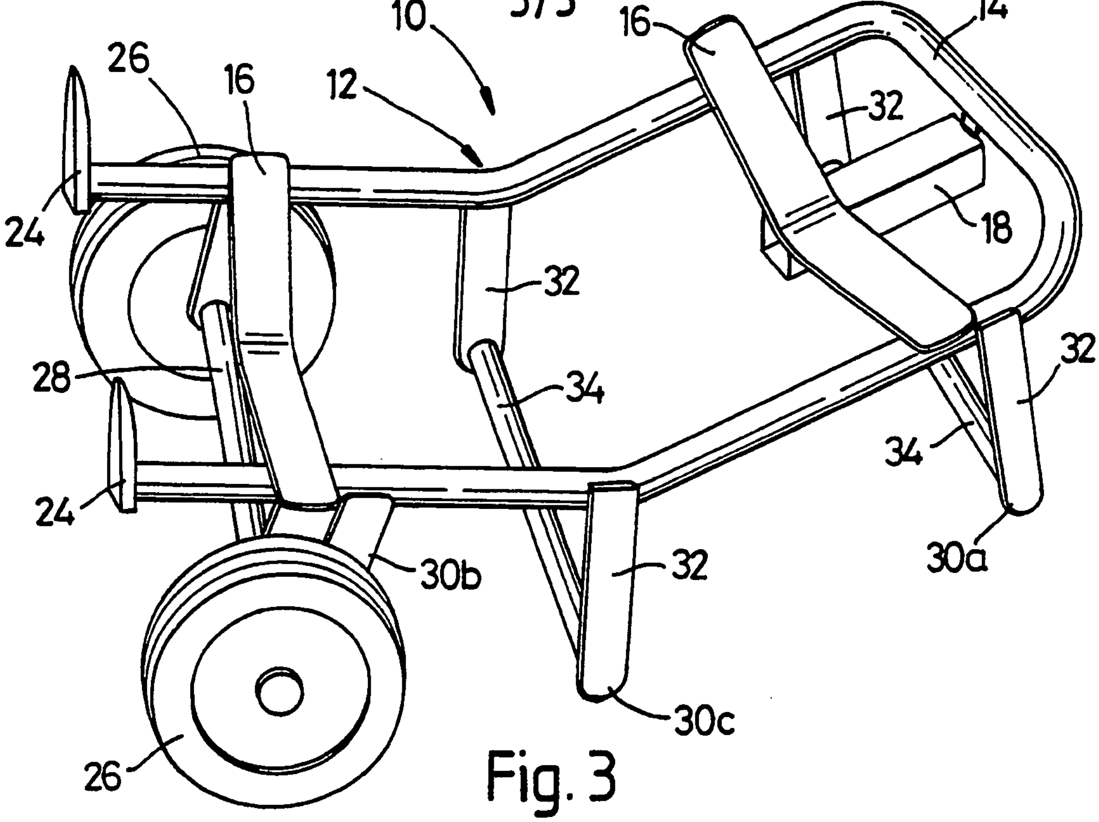

Fig. 3

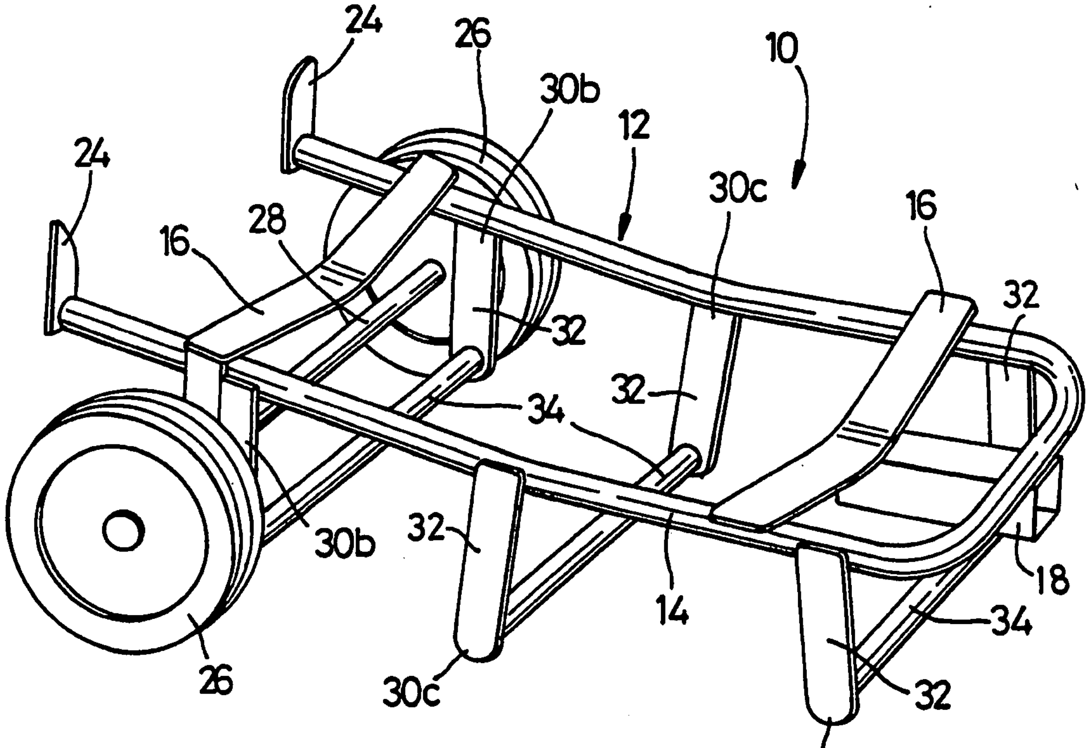

Fig. 4

BARREL HANDLING APPARATUS

The present invention relates to apparatus which facilitates the handling of barrels and has particular, but not exclusive, applicability to the handling of real ale barrels.

Traditionally, such real ale barrels have been transported using old-fashioned brute strength. When the barrel in question has a 36 gallon capacity, obviously a number of men need to be involved.

It is an object of the present invention to provide a trolley which facilitates the transportation of the barrels, preferably by one man even when the barrel in question is relatively large.

Once a given barrel has been suitably positioned, it is required, especially in connection with real ale barrels, to first orient the barrel horizontally so the fermentation process may be completed and then to tilt the barrel ready for dispensing. Again, traditionally the reorientation of the barrel has been accomplished by brute strength.

It is another object of the present invention to provide a cradle which facilitates the reorientation of the barrel.

According to a first aspect of the invention, there is provided a cradle for supporting a barrel, the cradle having a first side which is adapted to support the barrel and a second opposite side to which is attached three leg means, a first leg means being disposed at a first end region of the cradle, a second leg means being disposed at a second end region of the cradle, opposite the first end, and a third leg means being disposed intermediate the first and second leg means, the cradle being standable in two orientations, a first orientation wherein the cradle stands only on the first and third leg means and a second orientation wherein the cradle stands only on the second and third leg means.

According to a second aspect of the invention, there is provided a trolley for transporting a barrel comprising a cradle which has a first side which is adapted to support the side of the barrel and a wheel means disposed on a second side of the cradle, opposite the first side, a handle projecting from a first end region of the cradle, a projecting portion, attached at a second end region of the cradle opposite the first end region, which projects generally orthogonally of the first side of the cradle and is adapted to support the base of the barrel; and a gripping means disposed at the second end region of the cradle for gripping the rim of the barrel.

Preferably, the handle includes an elongate shaft.

The gripping means may be displaceable, preferably along the shaft of the handle. In a preferred embodiment, the gripping means may include a pair of fingers which are spaced from, and inwardly directed towards, the first side of the cradle, the rim of the barrel being gripped between the fingers and the first side of the cradle.

Further in accordance with the invention, the cradle of first aspect of the invention may constitute the cradle included in the second aspect of the invention. In such an embodiment, the second leg means is preferably disposed immediately adjacent the wheel means, and when the cradle stands on any combination of leg means, the wheel means does not contact the ground. Preferably, the handle is detachable from the cradle.

The accompanying drawings, which show a preferred stillage truck embodying both the first and second aspects of the invention, are hereinafter used to demonstrate a practical way of implementing the invention.

In the drawings:-

Figure 1 shows a side view of the stillage truck in a vertical, upright orientation having a barrel mounted thereon;

Figure 2 shows a front view of Figure 1 without the barrel;

Figure 3 shows one perspective view of the stillage truck shown in the preceding figure in a generally horizontal orientation with its handle removed; and

Figure 4 shows an alternative perspective view of the stillage truck of figure 3, but in a different horizontal orientation.

Referring to the drawing, the stillage truck, generally denoted 10, comprises a cradle 12 for supporting a barrel 100 (only shown in Figure 1).

Referring to figures 3 and 4, where the cradle 12 is best visible, the cradle 12 comprises a generally U-shaped member 14 and a pair of spaced support struts 16 extending across the arms of the member 14. The arms of the member 14 are slightly cranked midway along the length thereof so as to conform to the geometry of the barrel which is to be supported thereon. For the same reason, the support struts 14 are also slightly bowed. The cranked member 14 and the support struts 16 forms a convex support surface, which is hereinafter referred to as the first side of the cradle, the opposite concave side being referred to as the second side.

A sleeve 18 connects the closed end of the U-shaped member 14 to the neighbouring support strut 16. For convenience, the closed end of the U-shaped member 14 shall be referred to as the first end, and the region neighbouring and including the first end will be referred to as the first end region. As will be apparent from Figure 1, the function of the sleeve 18 is to receive the elongate shaft 20 of a handle 22, and thereby connect the handle 22 to the cradle 12. The shaft 20 is secured to the cradle 12 by a bolt-and-pin arrangement of known construction.

At the open end of the U-shaped member 14, a projecting portion in the form of leverage means is provided. For convenience, the open end of the U-shaped member 14 shall be referred to as the second end, and the region neighbouring and including the second end shall be referred to as the second end region. In this preferred embodiment, the leverage means is in the form of a pair of wedges 24, each having wedge-shaped outer end portions. Each of the members extends at right angles from the neighbouring portion of the member 14. In other embodiments of the invention, the leverage means may extend from the member 14 at an angle which differs significantly from 90°. But as will become apparent later, in order to function as a lever, this angle must be in the general region of 90°. A wheel means is also provided at the second end region of the cradle 12. In this preferred embodiment the wheel means includes a pair of wheels 2 which are coupled by an axle 28.

The stillage truck 10 is also provided with three leg means 30a, 30b, 30c, which when the truck 10 is in the position shown in Figures 3 and 4, support the truck 10. The three leg means 30a, 30b, 30c, are attached to the cradle 12 at the first end region of the cradle 12, the second end region adjacent the wheels 26, and an intermediate, central region on the cranked portion of the member 14, respectively. As will be apparent from the drawings, each leg means 30a, 30b, 30c, comprises a pair of opposed legs 32, connected by a shaft 34, each leg projecting in a direction orthogonal to the portion of the member 14 to which it is connected. In this embodiment, the legs of leg means 30b and 30c are of a length such that when the truck 10 stands on the second and third leg means 30b, 30c, as shown in Figure 3, the barrel 100 on the cradle 12 is supported substantially horizontally. Further, the length of the legs of the first leg means is selected such when the cradle 12 stands on first and third leg means 30a, 30c, as shown in Figure 4, the angle of the portion of the barrel 100 in the first end region of the cradle 12 with respect to the horizontal is between 8° and 14°. As will be appreciated by the man skilled-in-the-art, the precise angle at which the truck 10 needs to be tilted depends on the particular ale which is to be dispensed.

The truck 10 is also provided with a gripping means 36 for gripping the rim of the barrel 100, as described later. The gripping means 36 comprises a sleeve 38 which is slidable along the shaft 20, and a pair of fingers 40 rigidly connected to the sleeve 38, the fingers 40 being directed inwardly towards, but spaced from, the member 14, whereby the rim of the barrel 100 can be gripped between the fingers 40 and the member 14.

In order to load the barrel 100 onto the truck 12, the truck 12 is wheeled like a conventional wheelbarrow over to the barrel in question and manoeuvred into the upright position shown in Figure 1. The gripping means 36 is then upwardly displaced along the shaft 20. The truck 12 is then tilted forward in a direction indicated by the arrow A, whereby on returning the gripping means 36 to the position shown in Figure 1, the rim of the barrel 100 is engaged between the fingers 40 and the member 14.

Due to the gripping action of the gripping means 36, it is then possible to force the wedges 24 under the barrel 100 and, subsequently, tilt the truck 12 backwards (i.e. the direction opposite to that indicated by the arrow A), whereby the wedges 24 lever the barrel into the cradle 12 and enables the truck 12, together with the barrel 100, to be transported.

The applicant has found that a man using the present invention can transport a 36 gallon barrel by himself using only one hand.

Once, using the above procedure, the barrel 100 has been transported to the appropriate location, it will be appreciated that the truck 10 can be laid down into either of the Figure 3 or Figure 4 orientations. It will have been noted that in both Figures 3 and 4 the handle 22 and the gripping means 36 have been removed.

Usually, as previously explained, it is desirable in the context of real ales for the truck 10 first to be in the Figure 3 orientation, whereby a barrel mounted on the cradle 12 is in a substantially horizontal orientation, so that the fermentation process can continue to completion. It will be appreciated that in this orientation the design of the truck 10 must be such that the centre of mass of the barrel 100 is not in a position which causes the truck 12 to topple onto the first leg means 30a, i.e. the Figure 4 orientation.

As soon as the real ale is to be dispensed, the truck 10 can be tilted into the Figure 4 orientation ready for dispensing. Again, the overall design of the truck 10 needs to be such that in the Figure 4 orientation, the position of the centre of mass of the barrel 100 is not such as to cause the truck 12 to topple back onto the second leg means 30b.

It will be appreciated that for the truck 10 to be relatively stable in the both the Figure 3 and Figure 4 orientations the centre of mass of the barrel 100 needs to be acting in a vertical axis generally between the pair of leg means which are in contact with the ground.

As will have already been appreciated, if the aperture in the barrel 100 through which the ale is dispensed is to be low-down on the barrel 100, as is desirable, the fingers 40 of the gripping means 36 must be positioned on either side thereof when loading the barrel 100.

CLAIMS

1. A cradle for supporting a barrel, the cradle having a first side which is adapted to support the barrel and a second opposite side to which is attached three leg means, a first leg means being disposed at a first end region of the cradle, a second leg means being disposed at a second end region of the cradle, opposite the first end, and a third leg means being disposed intermediate the first and second leg means, the cradle being standable in two orientations, a first orientation wherein the cradle stands only on the first and third leg means and a second orientation wherein the cradle stands only on the second and third leg means.

2. A trolley for transporting a barrel comprising a cradle which has a first side which is adapted to support the side of the barrel and a wheel means disposed on a second side of the cradle, opposite the first side; a handle projecting from a first end region of the cradle; a projecting portion, attached at a second end of the cradle opposite the first end region, which projects generally orthogonally of the first side of the cradle and is adapted to support the base of the barrel; and a gripping means disposed at the second end region of the cradle for gripping the rim of the barrel.

3. The trolley as in claim 2 incorporating the cradle of claim 1.

4. The trolley as in claims 2 or 3, wherein the gripping means is displaceable.

5. The trolley as in claim 4, wherein the gripping means is displaceable along a shaft of the handle.

6. The trolley as in any of claims 2 to 5, wherein the gripping means includes a pair of fingers which are spaced from, and inwardly directed towards, the first side of the cradle whereby the rim of the barrel is gripped between the fingers and first side of the cradle.

7. The trolley as in any of claims 2 to 6, wherein the handle is detachable from the cradle.

8. A cradle constructed, arranged and adapted to operate substantially as herein described with reference to the accompanying drawings.

9. A trolley constructed, arranged and adapted to operate substantially as herein described with reference to the accompanying drawings.

-10-

Patents Act 1977 **Examiner's report to the Comptroller under Section 17** **(The Search report)**	Application number GB 9225474.7
Relevant Technical Fields (i) UK Cl (Ed.L) B8E (EIC) B7B (BTL1, BTL2) (ii) Int Cl (Ed.5) B62B (1/26) B65G 65/23, 24	Search Examiner D McMUNN Date of completion of Search 5 NOVEMBER 1993
Databases (see below) (i) UK Patent Office collections of GB, EP, WO and US patent specifications. (ii)	Documents considered relevant following a search in respect of Claims :- 1

Categories of documents

X:	Document indicating lack of novelty or of inventive step.	P:	Document published on or after the declared priority date but before the filing date of the present application.
Y:	Document indicating lack of inventive step if combined with one or more other documents of the same category.	E:	Patent document published on or after, but with priority date earlier than, the filing date of the present application.
A:	Document indicating technological background and/or state of the art.	&:	Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages		Relevant to claim(s)
X	GB 2068305 A	(BOC) note legs 12, 20 and wheels 11a, 11b	1
X	GB 972553	(BENTON) note spaced wheels plus V-shaped protruberance on handle	1
X	GB 712977	(POWELL) see spaced wheels 16 and arm 7	1
X	GB 326186	(BATES) note arms 19, 9 and wheel 16	1
X	GB 247270	(ALLEN) note arms 12, 4 and wheel 3	1

Databases:The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).

This Page is Inserted by IFW Indexing and Scanning Operations and is not part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☑ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: ______________________

IMAGES ARE BEST AVAILABLE COPY.
As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.